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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/017,524	02/03/98	KUBO	R 018623-00509

020350 HM12/0103
TOWNSEND AND TOWNSEND AND CREW
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EXAMINER	
DIBRINO,M	
ART UNIT	**PAPER NUMBER**
1644	18

DATE MAILED: 01/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applica[illegible]s)
09/017,524	Kubo et al
Examiner	**Group Art Unit**
Marianne DiBrino	1644

X Responsive to communication(s) filed on *Oct 4, 1999*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

X Claim(s) *6-73* is/are pending in the applicat

Of the above, claim(s) *6-64 and 68-73* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

X Claim(s) *65-67* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

X The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

X Notice of References Cited, PTO-892

X Information Disclosure Statement(s), PTO-1449, Paper No(s). *4 & 9*, filed 11/25/98 & 1/13/00, respectively

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

1. Applicants' response filed 10/4/99 and the amendments filed 6/2/00, 2/16/00 and 10/23/00 are acknowledged and have been entered.

Claims 6-73 are pending.

2. Applicants' election of the Invention of Group IV (claims 65-67) in Paper No. 17, filed 10/23/00, of the peptide TTLFCASDAK, which is SEQ ID NO: 32, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818).

Claims 6-64 and 68-73 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to nonelected inventions.

Claims 65-67 are currently being examined.

3. The instant application claims priority to 08/347,610, 08/159,339, 08/103,396, 08/027,746, 08/926,666 and 08/589,107 in the first line of the specification. The first line of the specification also lists "related" applications. If Applicant intends to claim priority to said related applications, then the word "related" needs to be deleted. As currently stated, and in view of the declaration, the instant application only claims priority to 08/589,107.

4. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The declaration is defective because: the first line of the specification claims priority to numerous applications that are not listed in the declaration.

5. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 65-67 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

This rejection is a new matter rejection.

The added material which is not supported by the original disclosure is as follows:

(1) "epitope consisting of about 8-11 amino acids".
The instant specification discloses on page 4 at lines 7-9 "The oligopeptides of the invention...usually consist of between about 8 and about 11 residues".

There is no disclosure of an "epitope consisting of about 8-11 residues".

(2) "a structural motif". The instant specification discloses on page 4 at lines 28-30 the term "motif", but the instant specification does not disclose the term "structural supermotif".

(3) "proviso that the immunogenic peptide" (the molecule or the compound)" does not comprises an entire native antigen". Applicants do not point to support in the specification, and the said proviso is not disclosed.

(4) "A *molecule* linked to said peptide to create a *compound*". Applicants point to support in the instant specification on page 12 at lines 22-24, however, the specification disclose "peptides can be synthetically conjugated to native fragments or particles". "Molecule" and "compound" are not disclosed in the instant specification.

(5) "An HLA-A3 *structural* motif comprising a first amino acid residue *at position two from an amino-terminal residue of the epitope*". The specification on page 3 at lines 7-8 discloses "the motif for HLA-A3.2 *comprises from the N-terminus* to the C-terminus *a first conserved residue...at position 2*". "At position two from an amino-terminal residue of the epitope" is not disclosed.

7. Applicant is reminded of the Revised Interim Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 64, No. 244, pages 71427-71440, Tuesday December 21, 1999; the following rejection is set forth herein.

Claims 65 and 67 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The specification does not provide adequate written description of the claimed invention. The legal standard for sufficiency of a patent's (or a specification's) written description is whether that description "reasonably conveys to the artisan that the inventor had possession at that time of the. . .claimed subject matter", Vas-Cath, Inc. V. Mahurkar, 19 USPQ2d 1111 (Fed. Cir. 1991). In the instant case, the specification does not convey to the artisan that the applicant had possession at the time of invention of the claimed "molecule linked to said peptide to

create a compound".

The instant claims encompass a pharmaceutical composition comprising a molecule linked to an immunogenic peptide to create a compound. There is insufficient disclosure in the specification on such said fragments.

To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In re Gosteli , 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood , 107 F.3d at 1572, 41 USPQ2d at 1966.

An adequate written description of an antigen "requires a precise definition, such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. Fiers v. Revel , 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description ... requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; Id. at 1170, 25 USPQ2d at 1606.

The specification does not disclose the structure of said "molecule", nor of said "compound". The specification discloses that the peptides of the invention can be linked to T helper epitopes with or without a linker molecule (page 17 at lines 6-17) or linked to a lipid or lipoprotein (page 18 at lines 9).

In claims involving chemical materials, generic formulae usually indicate with specificity what the generic claims encompass. One skilled in the art can distinguish such a formula from others and can identify many of the species that the claims encompass. Accordingly, such a formula is normally an adequate description of the claimed genus. However, a generic statement such as "molecule" without more, is not an adequate written description of the genus because it does not distinguish the claimed genus from others, except by the property of being combined with an immunogenic peptide to make a "compound". It does not specifically define any of the fragments that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by the property of being a portion of a "compound" does not suffice to define the genus because it is only an indication of what the property the antigen has. See Fiers, 984 F.2d at 1169-71, 25 USPQ2d at 1605-06. It is only

a definition of a useful result rather than a definition of what achieves that result. Many such species may achieve that result. The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin [e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material.

The instant disclosure of an immunogenic peptide that can be linked to a T helper epitope or to a lipid or lipoprotein does not adequately describe the scope of the claimed invention, which encompasses a substantial variety of subgenera. Since the disclosure fails to provide sufficient relevant identifying characteristics that identify members of the genus, and given the broad genus claimed, the disclosure of four fragments of defined sequence is insufficient to describe the claimed genus.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 65-67 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 65-67 are indefinite in the recitation of "at a carboxyl-terminal amino acid of the epitope" because it is not clear if it is *the* carboxyl-terminal amino acid residue or one close to it that is being referred to.

10. The invention is drawn to a pharmaceutical composition comprising an immunogenic peptide with or without an additional molecule linked to it. With regard to application of prior art, the filing date of the instant claims is that of the instant application, i.e., 2/3/98, because the scope of the claimed invention is not disclosed in parent applications. In minimis, the parent applications do not disclose a pharmaceutical composition comprising an immunogenic peptide *comprising an epitope consisting of about 8-11 residues* which comprises an HLA-A3 *structural* motif, and said parent applications *do not disclose the elected species* TTLFCASDAK.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

12. Claims 65-67 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,840,313.

U.S. Patent No. 5,840,313 discloses peptides from HIV-1 gp 120, including a peptide with the sequence GVPVWKEAT**TTLFCASDAK**AYDTE (SEQ ID NO: 3 of said patent), and pharmaceutical compositions thereof which are useful in immunization against HIV infection (especially Abstract). U.S. Patent No. 5,840,313 further discloses that the peptide immunogens of the vaccines may be covalently attached to one another, to other peptides, to a protein carrier or to other carriers (especially column 9 at lines 8-29). The instant claims are drawn to a composition comprising a (therapeutically effective human dose of [claims 65 and 66] an immunogenic peptide [claim 67]. It is an inherent property of the immunogenic peptide of the reference that it comprises an epitope (bolded and underlined, which is the elected species) which is 10 amino acid residues in length and that it comprises an HLA-A3 structural motif with Leu at position 2 and Lys at the carboxy terminal position of the epitope and that said peptide induces an HLA-A3 restricted CTL response.

The reference teachings anticipate the claimed invention.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 66 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi et al (Proc. Natl. Acad. Sci. USA. Volume 88, pp 10277-10281, 11/1991).

Takahashi et al teach a T-cell epitope (i.e., is recognized by CTL) from HIV envelope protein with the sequence RLRDLLLIVTR that is restricted by HLA-A3 (see entire article, especially Abstract, Introduction, Table 1 and page 10281, column 1, paragraph 2). This peptide is 11 amino acid residues in length and has Leu at position 2 and Arg at the carboxy terminal position. Takahashi et al further teach that CTL stimulation is considered to be desirable in developing vaccine and immunotherapy strategies with regard to HIV (especially page 10277, column 1), and that the definition of T-cell epitopes and their HLA restriction will contribute to strategies for HIV vaccine development (especially page 10277, column 2, lines 6-10). Takahashi et al also teach that the frequency of HLA-A3 is 24% and 14% in Caucasian and Black populations, respectively and therefore, a considerable portion of the population would be expected to respond to the said epitope (especially page 10281, column 1, paragraph 2).

Takahashi et al do not teach a pharmaceutical composition comprising said epitope.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have made a vaccine, i.e., a pharmaceutical composition, comprising the T-cell epitope of Takahashi et al because Takahashi et al teach that CTL stimulation is desirable in vaccine/immunotherapy strategies with regard to HIV and because Takahashi et al teach that a considerable portion of the population would be expected to respond to the said epitope.

One of ordinary skill in the art at the time the invention was made would have been motivated to do this in order to test the in vivo response of the T-cell epitope on the course of HIV infection in HLA-A3 positive individuals.

15. Claims 65 and 67 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi et al (Proc. Natl. Acad. Sci. USA. Volume 88, pp 10277-10281, 11/1991) as applied to claim 66 above, and further in view of WO 95/04542.

Takahashi et al teach a T-cell epitope (i.e., is recognized by CTL) from HIV envelope protein with the sequence RLRDLLLIVTR that is restricted by HLA-A3 (see entire article, especially Abstract, Introduction, Table 1 and page 10281, column 1, paragraph 2). This peptide is 11 amino acid residues in length and has Leu at position 2 and Arg at the carboxy terminal position. Takahashi et al further teach that CTL stimulation is considered to be desirable in developing vaccine and immunotherapy strategies with regard to HIV (especially page 10277, column 1), and that the definition of T-cell epitopes and their HLA restriction will contribute to strategies for HIV vaccine development (especially page 10277, column 2, lines 6-10). Takahashi et al also teach that the frequency of HLA-A3 is 24% and 14% in Caucasian and Black populations, respectively and therefore, a considerable portion of the population would

be expected to respond to the said epitope (especially page 10281, column 1, paragraph 2).

Takahashi et al do not teach a pharmaceutical composition comprising said epitope linked to a molecule.

WO 95/04542 teaches that CTL inducing peptides covalently linked to T helper peptides.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have made a vaccine, i.e., a pharmaceutical composition, comprising the T-cell epitope of Takahashi et al linked to the T helper epitope of WO 95/04542 because Takahashi et al teach that CTL stimulation is desirable in vaccine/immunotherapy strategies with regard to HIV and that a considerable portion of the population would be expected to respond to the said epitope and because WO 95/04542 teaches CTL inducing peptides covalently linked to T helper peptides.

One of ordinary skill in the art at the time the invention was made would have been motivated to do this in order to test the in vivo response of the T-cell epitope on the course of HIV infection in HLA-A3 positive individuals and to immunopotentiate the response using the T helper epitope of WO 95/04542.

16. No claim is allowed.

17. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware of in the specification.

18. The references "DB" and "DF" in the IDS filed 1/13/00, and the references "C48", "C49" and "C51" through "C59" in the IDS filed 11/25/98, have not been considered because they have not been provided.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne DiBrino whose telephone number is (703) 308-0061. The examiner can normally be reached Monday through Friday from 8:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

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